

## INTRODUCTION

Claims 1-5 were previously and under consideration.

Claims 1-5 have been rejected.

Claims 1 and 2 have been amended herein.

Claims 6-10 have been added.

Claims 1-10 are now pending and under consideration.

No new matter is being presented, and approval and entry are respectfully requested.

It is respectfully noted that "[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it (MPEP § 707.07(f)). Furthermore, MPEP § 707.07(f) states that although an "[a]pplicant's arguments with respect to [claims] have been considered ... moot in view of the new ground(s) of rejection ... "[t]he examiner **must**, however, address any arguments presented by the applicant **which are still relevant** to any references being applied." Applicant respectfully requests a response to each individual argument below that relates to any maintained basis of rejection.

## OBJECTIONS TO THE DRAWINGS

In the Office Action, at page 2, the drawings were objected to. In view of the accompanying Attachment to the Amendment, corrections to Figures 1, 2 and 3 have been requested. Therefore, the outstanding drawing objections should be resolved.

Reconsideration and withdrawal of the outstanding objections to the drawings is respectfully requested.

## CHANGE TO FIGURE 3

Figure 3 has been amended to remove "Prior Art" to correct a misunderstanding of the state of the art at the time of invention. The inventors believe that at the time of invention it was not known in the art to transmit a push program from a retrieval engine to an information server, where the push program receives any renewal information on indexes by monitoring changes in

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the information server (information renewal, addition, or deletion). It was known at the time of the invention to *pull* a Java program from a web server to a browser (Java VM), which is not the same as a sender starting or pushing the transmission of a program such as a push-program. Furthermore, the push concept in Fig. 3 was mistakenly thought to be prior art because it was known to transmit an index from an information server to a retrieval engine using e-mail. However, this is not what is shown in Fig. 3. Figure 3 shows a push-program that monitors its information server and pushes the index. This was not known at the time of invention.

If necessary, the inventors are willing to provide a declaration that the subject matter of Fig. 3 is derived from the inventors.

#### **CHANGES TO THE SPECIFICATION**

The specification has been reviewed in response to this Office Action. Changes have been made to the specification only to place it in preferred and better U.S. form for issuance and to resolve the Examiner's objections raised in the Office Action. No new matter has been added.

#### **REJECTIONS UNDER 35 USC § 112, SECOND PARAGRAPH**

In the Office Action, at page 2, claims 1-5 were rejected under 35 U.S.C. § 112, second paragraph, for the reasons set forth therein. The claims have been amended for clarity. Withdrawal of the rejection is respectfully requested.

#### **REJECTIONS UNDER 35 USC § 103**

In the Office Action, at pages 3-5, claims 1-5 were rejected under 35 U.S.C. § 103 as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Skinner. This rejection is traversed and reconsideration is requested.

#### **APPLICANT'S ADMITTED PRIOR ART (AAPA) NOT PRIOR ART**

Claim 1 recites information sources outputting an individual index. The rejection cited AAPA, Fig. 3, items 2, 6, and 8. As mentioned above, the cited features in Fig. 3 are not prior art. Withdrawal of the rejection is respectfully requested.

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ARCHITECTURAL DIFFERENCES OVER PRIOR ART: FOUR-TIER ARCHITECTURE (PRESENT INVENTION) COMPARED TO THREE-TIER ARCHITECTURE (BURROWS, SKINNER)

Burrows, not relied on to support the rejection, is mentioned below for prior art background and to emphasize differences between Skinner and the present invention. Similarities between Burrows and the present invention, and in particular similar clients and information/web servers help clarify that the mediator layer in the present invention is not found in three-tier architectures, whether the three-tier architecture is a web architecture or a database system.

Claim 1, for example, recites: "information sources" (e.g. web/information servers), a "user's client" (e.g. web browser) for requesting information from the "information sources", a "retrieval engine" (e.g. a search engine), and a "mediating apparatus ... between said information sources and said retrieval engine" receiving indices from the information sources and sending them to the retrieval engine for index construction.

In other words, an aspect of the presently claimed invention relates to an intermediary (mediator) that may be in a four-tier architecture, where the intermediary is one of the tiers. In one aspect, a four-tier architecture may be: user's client - search/retrieval engine - mediator - information server. The prior art does not include a fourth-tier mediator tier. Burrows discusses the well known three-tier web search architecture: web browser client - web search engine - web server. Skinner discusses a three-tier database system: client - application server - database server. Skinner's application server provides to the client an object interface to object data in the database server. A client is the only common component between Skinner and Burrows. A fourth-tier mediator is not discussed in the prior art. Burrows, in conventional fashion, has a retrieval engine that *pulls* from the information servers.

In the present invention, a mediator (see Fig. 4) is provided between an information server and a search engine used to search the information server. Thus, a four-tier architecture of user's client - retrieval engine - mediator - information server can be provided. In contrast, although the retrieval engines and information servers of the present invention architecturally correspond to the search engine 140 and server 120 in Burrows, the mediator tier of the present invention does not have an equivalent in Burrows, Skinner, or the AAPA.



**PRESENT MEDIATOR FUNCTIONALLY DIFFERENT FROM APPLICATION SERVER OF SKINNER**

Claim 1 recites a mediating apparatus "adapted to receive a plurality of individual indexes outputted from said plurality of information sources". The rejection, at page 4, lines 21 and 22, proposes that items 210, 212, and 214 of Skinner (Fig. 2) correspond to the index receiving function of the mediator in claims 1-5.

The present mediator mediates between information sources and retrieval engines. User requests are directed to the retrieval engines. The mediator is not recited as being used to handle information requests from users (e.g. from a browser). In Skinner, the application server (middle tier) is not used for handling index information. Rather, the application server is used for handling user/client requests themselves. The present mediator handles renewal information of indexes from the information servers (or push programs thereon). Furthermore, the application server of Skinner accesses a database server (proposed information source).

**SKINNER'S METADATA NOT COMPARABLE TO INDEXES BECAUSE METADATA IS FOR DESIGN OF SYSTEM, NOT OPERATION OF SYSTEM**

The rejection compared the claimed indexes to Skinner's metadata. The present invention relates to a system and index(es) for operational or run-time use by users. For example, claim 1 recites "a user request", "a user's client", an actively used index ("retrieving being done with the general index"), a mediator contributing to the index, etc. In contrast, Skinner's application server does not use metadata during operational run time (i.e. when handling user's retrieval requests). In contrast, Skinner's metadata is for system design. Figures 4, 5A, 5B, 6A, 6B, 7A, and 7B of Skinner relate to design or system generation, not user operation time (see Fig. 9, depicting class generation in the Design Time Environment). Thus, the metadata of Skinner exists in the Design Time Environment, where the design time or system generation time is when the format and structure of data to be stored (during later user operation time) is determined by a designer. In other words, metadata does not exist in Skinner's Run Time Environment; the Run Time Environment being the time when users operate the system to store, delete, and retrieve data in the database. The metadata of Skinner cannot correspond to indexes that are used during information retrieval by users.

Furthermore, according to the Free Online Dictionary of Computing ([www.foldoc.org](http://www.foldoc.org)), "metadata" is: "Data about data. In data processing, meta-data is definitional data that provides information about or documentation of other data managed within an application or

environment." An "index" is "a list of items (as topics or names) treated in a printed work that gives for each item the page number where it may be found" (Merriam-Webster's Dictionary). In computing an "index" is a list of items and location(s) where they may be found. Nothing in Skinner indicates that the metadata serves as an index. Data about data is not the same as data indicating the location(s) of data.

#### SKINNER'S MIDDLE TIER APPLICATION SERVER (PROPOSED MEDIATOR) DOES NOT RECEIVE MULTIPLE INDEXES

Claim 1, for example, recites a mediator "to receive a plurality of individual indexes *outputted from said plurality of information sources*". The rejection compares the application server of SKinner to claim 1's mediator. However, regarding Skinner's application server, "[c]onnection 214 between an application server 210 and a database server 212 represents the transmission of *request for data and the response to such requests from applications that reside in application server 210*" (col. 2, lines 25-29). Rather than receiving indexes outputted from information sources/servers, Skinner receives data from databases per client requests handled by the application server. Furthermore, the database server-application server connection 214 (shown as 310 in Fig. 9) indicates that the application server does not receive metadata from the database server 311, but rather receives it from the Design Time Environment 900-907 (see Fig. 9).

Withdrawal of the rejection of claims 1-5 is respectfully requested.

#### NEW CLAIMS

New claims 6-10 recite features not found in the prior art. Claim 6, for example, recites "a mediator separate from and between the information servers and the retrieval engines, [has] indicia of topical information categories of the information source servers and of the retrieval engines", which is used to distribute index information. Claim 8, for example, recites "a mediator ... being capable of mediating distribution of a push program and mediating distribution of index information pushed from the push-program after the push-program has been distributed by the mediator". Claim 9, for example, recites "each push-program received by a web server ... detects changes in information provided ... by its respective web server by comparing current information available from the respective web server with previous information available from the respective web server, and where each push-program responds to detected changes by pushing

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to the mediator program indicia of the differences".

## DEPENDENT CLAIMS

The dependent claims are deemed patentable due at least to their dependence from allowable independent claims. These claims are also patentable due to their recitation of independently distinguishing features. For example, claim 4 recites a mediator "selects an individual index satisfying an index selection condition stored in said index selection condition storage section, and ... sends the individual index selected ... to a retrieval engine associated with the index selection condition used in selection of the individual index". This feature is not taught or suggested by the prior art. Withdrawal of the rejection of the dependent claims is respectfully requested.

## CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on 14 Aug 2003  
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